

### **REMARKS/ARGUMENTS**

Reconsideration of the present application is respectfully requested. Claim 1 has been amended so that claims 1-17 are presently pending, with claim 1 being the sole independent claim.

In the Office Action dated May 24, 2007, the specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. In particular, claims 3 and 7 include the phrase "mechanically compressed," which is assertedly not disclosed in the specification. Applicant has amended the specification herein to recite an embodiment of the inventive process that provides antecedent basis for the claim language recited in claims 3 and 7. The amendment to the specification is taken substantially from the original claim language presented in claims 3 and 7. "The claims as filed in the original specification are part of the disclosure and therefore, if an application as originally filed contains a claim disclosing material not disclosed in the remainder of the specification, the applicant may amend the specification to include the claimed subject matter." (M.P.E.P. § 2163.06 III.). Therefore, Applicant submits that no new matter is being introduced as a result of this amendment. Consequently, Applicant respectfully requests that the objection to the specification be withdrawn.

Turning to the rejections in the Action, claims 1 and 3-4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,577,646 to Ziehn (the "Ziehn '646 patent") in view of U.S. Patent No. 3,753,440 to Ashburn (the "Ashburn '440 patent"). Claims 2 and 5-17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over the Ziehn '646 patent and the Ashburn '440 patent as applied to claims 1 and 3-4 above, and further in view of U.S. Patent No. 4,289,148

to Ziehn (the "Ziehn '148 patent"). However, Applicant respectfully submits that none of the prior art references of record, when considered singly or combination, show or suggest the process recited in the claims.

Turning initially to the claims, claim 1 recites a process for enhancing the filling capacity of tobacco material or tobacco additional material, wherein the material has an initial moisture of 10-30%. The process includes the steps of treating the material within a pressure vessel with a treatment gas selected from the group consisting of nitrogen, argon, and mixtures thereof at pressures of 400 to 1,000 bar followed by a continuous decompression; and subsequently thermally post-treating the discharged material, wherein during the process the filling density of the material in the pressure vessel is greater than 0.2 kg/dm<sup>3</sup>.

The process recited in claim 1 enables a method for increasing the filling capacity of tobacco with several advantages. For example, the recited process permits the use of an elevated tobacco filling density, i.e., a greater charge of tobacco in a predetermined treatment vessel, to achieve a desired enhancement in tobacco filling capacity. The use of a higher tobacco charge in the claimed process results in greater tobacco throughput than is normally found in prior art INCOM expansion processes. Moreover, the inventive process results in a decrease in the specific consumption of treatment gas and compression energy.

Turning to the prior art references of record, the Ziehn '646 patent discloses a process for improving the fillability of tobacco by introducing tobacco into one of a series of autoclaves 1-12. The tobacco is cooled during the treatment process by a treatment gas. In the disclosed embodiment,

30 kg of tobacco is treated within a 200 liter autoclave up to a pressure of 750 bar. The pressure is then removed and the tobacco is heat treated.

The Ziehn '646 patent fails to show or suggest the process as claimed in independent claim 1. For example, the Ziehn '646 patent fails to show or suggest a process wherein during the process the filling density of tobacco material in a pressure vessel is greater than  $0.2 \text{ kg/dm}^3$ . Instead, the Ziehn '646 patent discloses a tobacco treating process with tobacco having a filling density of  $0.15 \text{ kg/dm}^3$  (30 kg/200 liters).

The Ashburn '440 patent is cited for its asserted disclosure of a tobacco expansion process where the filling capacity of the tobacco prior to treatment was  $0.23 \text{ kg/dm}^3$ . The Ashburn '440 patent discloses the use of a vessel 10 having a chamber 11 inches deep, with a diameter of 4.25 inches. In Example I, the Ashburn '440 patent further discloses a bed of tobacco 26 in the vessel 10 that is 10 inches deep, with a mass of 270 g. Volatile liquid was introduced into the vessel 10 to a pressure of 4 psig and the vessel 10 was then heated in an oven until the pressure rose to 17 psig. The condensed liquid was then removed from the vessel 10 and the bed of tobacco 26 was found to occupy a depth of 7.5 inches. This depth corresponds to a density of tobacco during the treatment process, i.e., the filling density, of  $0.155 \text{ kg/dm}^3$  ( $270 \text{ g}/1743\text{cm}^3$ ), as will be discussed below.

The Ashburn '440 patent fails to show or suggest the process as claimed in independent claim 1. For example, the Ashburn '440 patent fails to show or suggest a process wherein during the process the *filling density* of tobacco material in a pressure vessel is greater than  $0.2 \text{ kg/dm}^3$ . Initially, Applicant submits that some confusion apparently exists between the terms

*filling capacity* (as disclosed in the prior art and used in the present application) and *filling density* (as disclosed and claimed in the present application). *Filling capacity* is a characteristic of the tobacco that identifies how much tobacco mass is required to fill a cigarette. It is usually preferable to maximize or enhance filling capacity of tobacco so that a cigarette may be produced with a minimal mass of tobacco. Filling capacity is measured under standard conditions by a compressometer before or after tobacco treatment. (Ashburn '440 Specification, Col. 6, L 1-13). More specifically, filling capacity is measured in a chamber of the compressometer, with the tobacco being compressed to a predetermined pressure that "corresponds closely to the pressure normally applied by the wrapping paper to tobacco in cigarettes." (*Id.*). On the other hand, *filling density* is a measurement of tobacco density taken during the tobacco treatment process and is a function of the conditions presented by the treatment process. One method of measuring filling density as disclosed in the present application is to measure the mass of tobacco in a treatment vessel and measure the corresponding volume of the tobacco in the vessel.

The Examiner has correctly noted that the Ashburn '440 patent discloses a value of *filling capacity* of 0.23 kg/dm<sup>3</sup>. However, the Ashburn '440 patent discloses a *filling density* that can be determined from the volume of tobacco introduced into the vessel 10 and the corresponding mass of tobacco under particular process conditions. For example, the filling density disclosed in Example I of the Ashburn '440 patent only reached a value of 0.155 kg/dm<sup>3</sup> (270 g/1743cm<sup>3</sup>). Applicant submits that the other filling densities disclosed in the Ashburn '440 patent are all below 0.2 kg/dm<sup>3</sup> and range from about 0.12-0.16 kg/dm<sup>3</sup>. Moreover, a process exhibiting a filling density

greater than  $0.2 \text{ kg/dm}^3$  would simply not be expected to produce an enhanced tobacco filling capacity. First, the prior art teaches that increasing the filling density generally produces "lower filling capacities of the expanded tobacco material." (Translation; p. 2, L 22-28). Also, an increase of filling density to enhance filling capacity is simply counterintuitive, i.e., it doesn't make sense to compress tobacco during treatment in order to produce tobacco that expands more effectively for cigarette filling purposes. Even if the Ziehn '646 patent is combined with the teachings of the Ashburn '440 patent, such a hypothetical combination also fails to arrive at the invention claimed in independent claim 1.

The Ziehn '148 patent is cited for its asserted disclosure of a tobacco treatment step that presents a pressure time defined between the start of pressure buildup and decompression, with the pressure time being at least 300 sec. The Ziehn '148 patent also fails to show or suggest the process as claimed in independent claim 1. Similar to the Ziehn '646 patent and the Ashburn '440 patent, the Ziehn '148 patent fails to show or suggest a process wherein during the process the filling density of tobacco material in a pressure vessel is greater than  $0.2 \text{ kg/dm}^3$ .

Applicant respectfully submits that all of the references of record, when considered singly or in combination with any of the other references of record, fail to disclose or suggest the use of the process recited in the pending claims.

In view of the foregoing, Applicant submits that the independent claim 1 recites a process not shown or suggested in the prior art references of record. Claims 2-17 depend either

Appl. No. 10/520,024  
Amdt. dated August 23, 2007  
Reply to Office Action of May 24, 2007

directly or indirectly from claim 1 and recite additional features of the invention not shown or suggested by the prior art.

Therefore, the present application should now be in condition for allowance and such allowance is respectfully requested. Should the Examiner have any questions, please contact the undersigned at (800) 445-3460.

The Commissioner is hereby authorized to charge any fees associated with this communication to the undersigned's Deposit Account No. 19-0522.

Respectfully submitted,

HOVEY WILLIAMS LLP



By:

Andrew G. Colombo, Reg. No. 40,565  
2405 Grand Boulevard, Suite 400  
Kansas City, Missouri 64108  
(816) 474-9050

ATTORNEYS FOR APPLICANT